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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/679,480	SUZUKI ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *54-70 and 79-83* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *54-70 and 79-83* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The examiner acknowledges the amendments to claims 54, 58, 63, and 67 filed on Nov. 5, 2007. Claims 54-70 and 79-83 are pending.

2. The rejections of claims 54-70 and 79-83 under 35 U.S.C. 112, second paragraph and first paragraphs, set forth in the office action mailed on Aug. 3, 2007, paragraphs 6 and 8, respectively, have been withdrawn in response to the amendments to claims 54, 58, 63, and 67 filed on Nov. 5, 2007.

The objections to claims 54, 58, 63, and 67 set forth in the office action mailed on Aug. 3, 2007, paragraph 9, have been withdrawn in response to the amendments to claims 54, 58, 63, and 67 filed on Nov. 5, 2007.

3. Applicants are advised that should claim 59 be found allowable, claim 81 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 54, 55, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 8-029998 (JP'998), as evidenced by applicants' admission at page 31, lines 9-11, of the instant specification (applicants' admission I), combined with Japanese Patent 07-295250 (JP'250), and Schaffert, Electrophotography, p. 50 and Fig. 4a, and US 4,468,110 (Tanigawa).

See the DERWENT machine-assisted translations of JP'998 and JP'250, and the Japanese Patent Office (JPO) machine-assisted translation of JP'998 for cites.

JP'998 discloses an electrophotographic photoreceptor comprising a conductive aluminum drum, an intermediate layer, a charge generation layer, and a charge transport layer. The charge generation layer comprises 3 parts by weight of a τ-form metal-free phthalocyanine pigment and 3.5 parts by weight of the asymmetric bisazo pigment (I)-30. DERWENT translation, Table 1-(7) at page 19, compound (I)-30; paragraphs 0035, 0036, 0042, and 0043; and example 10 in paragraph 0047; and JPO translation, paragraph 0035, lines 4-5. The weight ratio of

phthalocyanine pigment to bisazo pigment is 3:3.5, which is within the range of 1:5 to 5:1 recited in instant claim 54. The intermediate layer has a layer thickness of 0.1 μm, which meets the layer thickness range of "up to 10 μm, excluding 0" recited in instant claim 80. See the JPO translation, paragraph 0035, lines 4-5. (Note that the DERWENT translation of paragraph 0035 is missing the text in lines 4-5 of the JPO translation.) The JP'998 compound I-30 meets the limitations of formula II recited in instant claim 54, when Cp1 is C1-1, i.e., phenyl, and Cp2 is C1-3, i.e., 3-chlorophenyl. JP'998 further discloses that the asymmetric bisazo pigment can equally be any of the asymmetric bisazo pigments shown in Tables 1-(1) to 1-(11). Said pigments also meet the limitations of formula II recited in instant claim 54. According to JP'998, its photoreceptor has high spectral sensitivity in the visible light to the near infrared region. DERWENT translation, paragraph 0004.

JP'998 does not exemplify a photoreceptor comprising an intermediate layer comprising titanium oxide as recited in the instant claims. However, JP'998 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric

potential of the photoreceptor. DERWENT translation, paragraph 0030. These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'998, to add the metal pigment titanium oxide to the intermediate layer in the photoreceptor disclosed by JP'998. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that has high spectral sensitivity in the visible light to the near infrared region and that prevents the occurrence of moire and exhibits a reduction in residual electric potential.

JP'998 also does not disclose that the charge transport layer comprises a sulfur-containing compound as recited in the instant claims. However, JP'998 discloses that the charge transport layer can comprise an antioxidant, such as a sulfur-based compound. DERWENT translation, paragraph 0027.

JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. DERWENT translation,

paragraph 0007, compounds (I-1) to (I-4) at paragraph 0026, compounds (II-1) to (II-3) at paragraph 0028. JP'250 exemplifies a charge transport layer comprising 1.5 parts by weight of the sulfur-containing antioxidant per 100 parts by weight of the charge transport material. The amount of 1.5 parts by weight was determined from the information provided in the DERWENT translation, paragraph 0050. The amount of 1.5 parts by weight per 100 parts by weight of the charge transport material is within the range of "0.1 to 5 parts by weight . . . based on 100 parts by weight" of the charge transport material recited in instant claim 54. JP'250 discloses that said sulfur-containing compounds prevent the deterioration of the photoreceptor due to ozone in the ambient air or due to strong light irradiation. The photoreceptor is said to have improved potential stability over long periods of time. DERWENT translation, paragraphs 0003, 0006, and 0007, and paragraph 0054, lines 1-4. JP'250 further teaches that its sulfur-containing antioxidants provide photoreceptors with improved stability of electrification and sensitivity over long periods of time compared to known hindered phenol antioxidants. DERWENT translation, Table 1, example 1 and comparative examples 3 and 4, and paragraph 0054, lines 14-18.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims, in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material in the charge transport layer, as the antioxidant in the photoreceptor rendered obvious over the teachings of JP'998. That person would have had a reasonable expectation of successfully obtaining a photoreceptor that has improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image forming apparatus which comprises a contact charger," in claim 54 is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the combined teachings of the cited prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is well known in

the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." See Schaffert, p. 50, section 2.6.1, lines 1 and 2. According to Schaffert, "[w]hen a xerographic plate sensitized with positive charges is exposed to a line negative, the image areas are discharged and the nonimage areas remain charged . . . because of the fringe field effect, negative charges will be induced on the surface of the xerographic plate near the edges of the image areas. Such an area is represented at E in Fig. 4a. Now, if the plate is developed with an electropositive developer, the positively charged toner will be attracted to the induced negative charges, and a photographically positive image is developed." Schaffert further teaches that in the case of xerographic plates requiring negative sensitization, an electronegative developer would be used. See Schaffert, page 50, section 2.6.1, lines 4-13, and Fig. 4a. According to Tanigawa, "in reversal development, there is used a developer charged with the same polarity as that of the latent image background portion of the photosensitive medium. The developer is applied to the latent image portion where the charge on the surface of the photosensitive medium has been decayed by the laser beam exposure." Tanigawa, col. 1,

lines 49-55. As discussed above, the photoreceptor rendered obvious over the combined teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 54 does not appear to result in a compositional or structural difference between the photoreceptor recited in the instant claims and the photoreceptor rendered obvious over the combined teachings of the cited prior art.

6. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 54 above, further combined with additional teachings in JP'998. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 8, which are incorporated herein by reference.

7. Claims 58-60, 63, 64, 67, 68, and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and

Tanigawa, as applied to claims 54 and 55 above, further combined with US 5,047,803 (Kanoto). See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 5 above, which is incorporated herein by reference.

JP'998 does not disclose that the electrophotographic photoreceptor can be used in a process cartridge or in an apparatus as recited in the instant claims. Nor does JP'998 disclose that its photoreceptor can be used in the image forming method recited in the instant claims.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art.

Kanoto discloses that process cartridges in electrophotographic apparatuses are well known in the art. Kanoto discloses that process cartridges comprising an electrophotographic photoreceptor and at least one processing means, such as a contact roller charger or a corona charger, a developing device, a cleaner, and other elements are widely used in the field of image forming apparatuses that are small and that do not require maintenance. Col. 1, lines 18-28, and

col. 3, lines 36-38. Kanoto discloses an image forming apparatus comprising a process cartridge that is easily dismounted from the main assembly of the image forming apparatus. Col. 1, lines 60-63. Kanoto shows an example of such an apparatus in Fig. 1. The apparatus comprises a process cartridge **100**, a laser beam scanner **7** as the image-wise exposure source, an image transfer roller **8** to transfer the toned image from the photoreceptor to a receiving member, and a pair of fixing rollers **15a** and **15b** to fix the toned image on the receiving member. The process cartridge **100** comprises a photosensitive drum **1** (i.e., photoreceptor), a charging roller **2**, a developing device **3**, and a cleaning device **4** to remove residual toner or other contaminants from the photoreceptor after development. See Fig. 1, and col. 2, line 37, to col. 4, line 38. Charging roller **2** meets the contact charger recited in instant claims 59, 81, and 82. Kanoto discloses that the charging roller **2**, the developing device **3**, or the cleaning device **4** need not be contained in the process cartridge **100**, but can be part of the image forming apparatus. Col. 2, lines 57-60. Kanoto further discloses that the developing device **3** in the process cartridge or image forming apparatus can reverse develop the electrostatic latent

image formed on the photoreceptor with a developer having the same polarity as the charge remaining on the photoreceptor. Col. 3, lines 57-61. Said developing device meets the developing device recited in instant claims 58 and 63. Kanoto further discloses that its imaging apparatus performs an image forming process that meets the process steps recited in instant claims 67 and 83, but for the step of providing the particular photoreceptor. Kanoto, col. 3, line 49, to col. 4, line 38.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to incorporate the electrophotographic photoreceptor rendered obvious over the combined teachings of JP'998, JP'250, Schaffert, and Tanigawa in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully practicing a reversal development imaging method and obtaining an image forming apparatus comprising an easily detachable process cartridge having the benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

8. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 55 above, further combined with US 4,507,374 (Kakuta), as evidenced by applicants' admission at page 21, lines 11-19, of the instant specification (applicants' admission II), and DERWENT abstract Acc. No. 1983-816039. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 10, which are incorporated herein by reference.

9. Claims 61, 65, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto, as applied to claims 60, 64, and 68 above, further combined with Kakuta, as evidenced by applicants' admission II and DERWENT abstract Acc. No. 1983-816039. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

The claims are rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 11, which are incorporated herein by reference.

10. Claims 54, 55, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 7-128890 (JP'890), as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa. See the DERWENT machine-assisted translations of JP'890 and JP'250 for cites.

JP'890 discloses an electrophotographic photoreceptor comprising a conductive aluminum drum, an intermediate layer, a charge generation layer, and a charge transport layer. The intermediate layer has a thickness of 0.1 μm, which meets the layer thickness of "up to 10 μm, excluding 0" recited in instant claim 80. The charge generation layer comprises 2.5 parts by weight of an X-form metal-free phthalocyanine pigment and 3 parts by weight of the asymmetric bisazo pigment (I-30). Translation, Table 1-(7) at page 20, compound (I)-30; paragraphs 0035, 0036, 0042, and 0043; and example 10 in paragraph 0047. (Note that the DERWENT translation paragraph 0042 incorrectly states that "3.0 weight parts and 2.5 weight-parts of X type metal-less phthalocyanines were added for the

illustration compound (1)-24 disazo pigment." Paragraph 0042 in JP'890 states that 3.0 weight parts of the compound (1)-24 and 2.5 weight parts of X type metal-less phthalocyanine are used to form the charge generation layer.) The weight ratio of phthalocyanine pigment to bisazo pigment is 2.5:3, which is within the range of 1:5 to 5:1 recited in instant claim 54. The JP'890 compound I-30 meets the limitations of formula II recited in instant claim 54, when Cp1 is C1-1, i.e., phenyl, and Cp2 is C1-3, i.e., 3-chlorophenyl. JP'890 further discloses that the asymmetric bisazo pigment can equally be any of the asymmetric bisazo pigments shown in Tables 1-(1) to 1-(11). Said pigments also meet the limitations of formula II recited in instant claim 54. According to JP'890, its photoreceptor has high spectral sensitivity in the visible light to the near infrared region. Translation, paragraph 0004.

JP'890 does not exemplify a photoreceptor comprising an intermediate layer comprising titanium oxide as recited in the instant claims. However, JP'890 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric potential of the photoreceptor. Translation, paragraph 0030.

These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'890, to add the metal pigment titanium oxide to the intermediate layer in the photoreceptor disclosed by JP'890. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that has high spectral sensitivity in the visible light to the near infrared region and that prevents the occurrence of moire and exhibits a reduction in residual electric potential.

JP'890 does not disclose that the charge transport layer comprises a sulfur-containing compound as recited in the instant claims.

JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. The discussion of JP'250 in paragraph 5, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material, as an antioxidant in the charge transport layer in the photoreceptor rendered obvious over the teachings of JP'890. That person would have had a reasonable expectation of successfully obtaining a photoreceptor that has improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image forming apparatus which comprises a contact charger," in claim 54 is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the combined teachings of the cited prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is well known in

the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." The discussions of Schaffert and Tanigawa in paragraph 5 above are incorporated herein by reference. As discussed above, the photoreceptor rendered obvious over the combined teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 54 does not appear to result in a compositional or structural difference between the photoreceptor recited in the instant claims and the photoreceptor rendered obvious over the combined teachings of the cited prior art.

11. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 54 above, further combined with additional teachings in JP'890. See the DERWENT translations of JP'890 and JP'250 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 13, which are incorporated herein by reference.

12. Claims 58-60, 63, 64, 67, 68, and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claims 54 and 55 above, further combined with Kanoto. See the DERWENT translations of JP'890 and JP'250 for cites.

JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 10 above, which is incorporated herein by reference.

JP'890 does not disclose that the electrophotographic photoreceptor can be used in a process cartridge or in an apparatus as recited in the instant claims. Nor does JP'890 disclose that its photoreceptor can be used in the image forming method recited in the instant claims.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art. Kanoto discloses an image forming apparatus comprising a readily detachable process cartridge. The apparatus and process cartridge meet the structural limitations recited in instant claims 58, 59, 63, 81, and 82 but for the particular photoreceptor. Kanoto further discloses that its imaging

apparatus performs an image forming process that meets the process steps recited in instant claims 67 and 83, but for the step of providing the particular photoreceptor. The discussion of Kanoto in paragraph 7, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to incorporate the electrophotographic photoreceptor rendered obvious over the combined teachings of JP'890, JP'250, Schaffert, and Tanigawa in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully practicing a reversal development imaging method and obtaining an image forming apparatus comprising an easily detachable process cartridge having the benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

13. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 55 above, further combined with US 3,357,989

(Byrne). See the DERWENT translations of JP'890 and JP'250 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apt. 17, 2007, paragraph 15, which are incorporated herein by reference.

14. Claims 62, 66, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto, as applied to claims 60, 64, and 68 above, further combined with Byrne. See the DERWENT machine-assisted translations of JP'890 and JP'250 for cites.

The claims are rejected for the reasons discussed in the office action mailed on Apt. 17, 2007, paragraph 16, which are incorporated herein by reference.

15. Applicants' arguments filed on Nov. 5, 2007, as applicable to the rejections over JP'998 and the rejections over JP'890, set forth in paragraphs 5-14 above have been fully considered but they are not persuasive.

Applicants assert that there is no motivation to use the organic sulfur antioxidant described in JP'250 in the

photosensitive layers in the photoreceptors of JP'998 and JP'890. Applicants assert that none of the cited references recognizes the problem caused by using two kinds of pigments having different spectral sensitivity properties solved by applicants. Applicants also assert that JP'250 does not disclose or suggest that "the sulfur-containing antioxidants act effectively for the energy gap caused by the use of two or more charge generation materials and dissolve or decrease the trap level." Applicants reference the data shown in Tables 12, 13, and 16 of the specification, as evidence of the "technical effects (e.g., decrease in number of black spots and prevention of occurrence of background fouling)" produced by the addition of an organic sulfur-containing antioxidant as described in the present specification.

Applicants' assertions are not persuasive. The reasons for combining the teachings of the references do not have to be those of applicants. As admitted by applicants in the instant specification at page 4, lines 2-10, the use of organic sulfur-containing antioxidants in photoreceptors is well-known in the art to control the increase in residual potential and deterioration of characteristics of the photoconductor due to light irradiation. As discussed in the rejections in

paragraphs 5 and 10 above, JP'250 teaches these advantages and other advantages of using its sulfur-containing compounds in the photosensitive layers in photoreceptors. See paragraph 5 supra, page 6, lines 12-22. Thus, JP'250 provides motivation, reason, and suggestion to a person having ordinary skill in the art to use its sulfur-containing compounds in the photosensitive layers in the photoreceptors described by JP'998 and JP'890. Accordingly, for the reasons discussed in the rejections in paragraphs 5-14 above, the instantly claimed invention is rendered prima facie obvious over the combined teachings of the cited prior art.

In addition, the showings in Tables 12, 13, and 16 of the instant specification are insufficient to overcome the rejections because they fail to show that the instantly claimed photoreceptor yields unexpected results over the prior art of JP'998 and JP'890 for the following reasons:

(1) The showings in Table 12 and 13 are outside the scope of the instant claims. Instant examples 1-4 exemplify photoreceptors that do not comprise a charge generation layer comprising an "asymmetric" bisazo pigment of formula (II) and a phthalocyanine pigment as recited in the instant independent claims. Rather, examples 1 and 2 exemplify a charge generation

layer comprising a "symmetric" bisazo compound and a trisazo compound. Examples 3 and 4 exemplify a charge generation layer comprising a "symmetric" bisazo compound and a τ-form metal-free phthalocyanine pigment.

(2) The showing in Table 16 is not commensurate in scope with the instant claims. The evidence in the instant specification is insufficient to show that the full scope of the instant claims yields unexpected results over the prior art.

Instant examples 5-16 exemplify preferred photoreceptors comprising aluminum drums having a diameter of 30 mm and a preferred intermediate layer having a preferred thickness of 3 μm. See instant claim 79. The photoreceptors in examples 5-16 also comprise a charge transfer layer comprising 0.9 parts by weight of the particular organic sulfur-containing antioxidant S-1, S-2, S-3, III-3, III-4, III-5, or III-6 based on 100 parts by weight the of the charge transfer material.

(a) The instant independent claims recite that the organic sulfur-containing compound is present in an amount of 0.1 to 5 parts by weight based on 100 parts of the charge transport material. The instant claims do not limit the amount of the organic sulfur-containing compound to be only 0.9 parts by weight per 100 parts by weight of the charge transport material,

as exemplified in the instant specification. The limited showing of only one amount does not exemplify the full scope of the amounts recited in the instant claims. Thus, applicants' showing is not commensurate with the scope of the exclusion protection they seek.

(b) As discussed in the office action mailed on Aug. 27, 2003, paragraph 9, which is incorporated herein by reference, the Rule 132 declaration, which was executed by Yasuo Suzuki on Jul. 4, 2002 (Declaration-2002), and filed on Jul. 8, 2002, attributes the differences in black spot formation between examples comprising a drum having a diameter of 30 mm and an intermediate layer having a thickness of 3 μm and examples comprising a drum having a diameter of 80 mm and an intermediate layer having a thickness of 4.5 μm to:

(b-1) The difference in the layer thickness of the intermediate layer. As discussed in the office action mailed on Aug. 27, 2003, paragraph 9, the Declaration-2002 attributes the differences in black spot formation between comparative examples 5 and 13 of the instant specification and examples 8 and 15 of US 6,136,483 (Suzuki'483) to the differences in the thickness in the undercoat layer. The declarant states that "the underlayer layer, which is thicker in the Suzuki Examples

(4.5 μm) than in the present Comparative Examples (3.0 μm), has a charge blocking property." The declarant further states that "the thicker the underlayer, the better the black spot formation." Thus, the thickness of the intermediate layer appears to be a critical element to the reduction of formation of black spots. However, independent claims 54, 58, 63, and 67 do not limit the layer thickness of the intermediate layer. The instant specification at page 31, lines 24-25, discloses that the intermediate layer may have a thickness of "0 to 10 μm." There is no evidence on the present record showing that photoreceptors that comprise a conductive drum having a diameter of 80 mm and an intermediate layer having a thickness 0.1 μm, such as those exemplified in the prior art, provide unexpected results in reduced formation of black spots. Indeed, the declarant's testimony indicates the contrary might be expected to be true.

(b-2) Furthermore, as discussed in the office action mailed on Aug. 27, 2003, paragraph 9, the Declaration-2002 attributes the differences in black spot formation between comparative examples 5 and 13 of the instant specification and examples 8 and 15 of US 6,136,483 (Suzuki'483) to the differences in the photoreceptor drum diameter. The declarant states that "when

Sukuzi's photoreceptor (having a diameter of 80 mm) produces 50,000 images [on A-4 paper], it revolves about 53,724 times," while the "photoreceptor used in the presence application revolves about 143,312 times to produce 50,000 images [on A-4 paper], because it has a diameter of 30 mm." The declarant further states that "the surface of the photoreceptor having a diameter of 30 mm is exposed to hazards by a factor of 2.67 times greater than that of the Suzuki photoreceptor having a diameter of 80 mm." The declarant states that "when black spots are observed after the 38,000th image in Comparative Examples of the present application, it is nearly equivalent to black spots being observed from about the 100,000th image in the Suzuki Examples." Thus, the diameter of the photoreceptor appears to also be a critical element in the formation of black spots. However, the independent claims 54, 58, 63, and 67 do not limit the diameter of the aluminum drum. The exemplification of a drum diameter of 30 mm in examples 5-16 in the instant specification is not commensurate in scope with the instant claims, which are not limited to any drum diameter.

Thus, both the diameter of the photoreceptor drum and the thickness of the intermediate layer appear to be critical elements in the prevention of formation of black spots.

Independent claims 54, 58, 63, and 67 do not recite these critical and preferred elements.

(3) The instant specification does not compare adequately to JP'998 or to JP'890.

Comparative examples 5, 9, and 13, which comprise a charge generation layer comprising an asymmetric bisazo and a metal-free phthalocyanine pigment, comprise an aluminum drum having a drum diameter of 30 mm and an intermediate layer having a thickness of 3.0 μm. In comparative examples 5 and 13, the charge generation layer comprises either the asymmetric bisazo pigments of formulas VII or VIII and τ-form metal-free phthalocyanine. In comparative example 9, the charge generation layer comprises the asymmetric bisazo pigment of formula VII and the X-form metal-free phthalocyanine.

As discussed supra, the intermediate layer thickness and the aluminum drum diameter appear to be critical elements in the formation of images free from black spots. Instant independent claims 54, 58, 63, and 67 do not limit the thickness of the intermediate layer. Nor do they limit the diameter of the aluminum drum.

As discussed in paragraphs 5 and 10 above, both JP'998 and JP'890 exemplify photoreceptors comprising an aluminum cylinder

having a diameter of 80 mm and an intermediate layer having a thickness of 0.1 μm. See DERWENT translation and JPO translation of JP'998, example 10 in paragraph 0047; the DERWENT translation of JP'890, example 10 in paragraph 0047. The instant claims do not exclude the intermediate layer thickness of 0.1 μm or the drum diameter of 80 mm. The instant specification at page 31, lines 24-35, discloses that the intermediate layer may have a thickness ranging from 0 to 10 μm. The comparative examples do not exemplify such photoreceptors comprising drums having a diameter of 80 mm and an intermediate layer having a thickness of 0.1 μm. Accordingly, comparative examples 5, 9, and 13 in the instant specification are not a probative comparison to JP'998 or to JP'890.

Thus, given the welter of unconstrained variables and applicants' limited showings, applicants have not satisfied their burden to show that the full scope of the instantly claimed invention provides unexpected results over the prior art.

(4) Furthermore, the charge stability results ΔVD do not appear to be unexpected. As discussed supra, as admitted by applicants in the instant specification at page 4, lines 2-10, the use of organic sulfur-containing antioxidants in

photoreceptors is well-known in the art to control the deterioration of characteristics of the photoconductor due to light irradiation. As discussed in paragraphs 5 and 10 above, JP'250 teaches that its sulfur-containing compounds prevent the deterioration of the photoreceptor due to strong light irradiation. The photoreceptor is said to have improved potential stability over long periods of time. Table 1 of JP'250 shows that a photoreceptor comprising a charge transporting layer comprising its sulfur compound I-4, which is within the limitations of instant formula III, while n is 18, exhibits an initial electric potential before irradiation (Vs) of -627 V; and an electric potential after one hour irradiation with light of 1000 lx that differs from the Vs by 1 V (ΔVs). See the DERWENT translation of JP'250, paragraph 0026, sulfur compound (I-4), paragraph 0053 for ΔVs measurement, and Table 1 at page 38, example 1. JP'250 shows that a photoreceptor that has the same composition as that in example 1, but without the sulfur compound I-4, exhibits an initial electric potential before irradiation (Vs) of -645 V, but a ΔVs of -154 V. See Table 1, comparative example 1. Table 16 in the instant specification reports that the photoreceptor in example 8, which comprises the sulfur compound III-6, which is the same as JP'250

compound I-4, exhibits a ΔVD of 20V, while the photoreceptor in comparative example 5, which has the same composition as example 8, but no sulfur compound, exhibits a ΔVD of 100 V. See the instant specification, Table 1 at page 10, sulfur compound III-6, and Table 16, example 8 and comparative example 5. According to the instant specification, ΔVD is the difference between the initial electric potential before irradiation of the photoreceptor and the electric potential after 60 minutes irradiation with light of 1000 lux. These experimental conditions appear to be the same as that used in JP'250. Thus, the change in magnitude between the ΔVs values reported in JP'250 for photoreceptors comprising or not comprising its sulfur compound appears to be the same or similar to the change between applicants' ΔVD values reported in Table 16 for photoreceptors comprising or not comprising the sulfur compound. Therefore, the results in ΔVD reported in the instant specification do not appear to be unexpected as alleged by applicants.

Accordingly, the rejections over the combined teachings of JP'998 and JP'250 and over the combined teachings of JP'890 and JP'250 stand.

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. The following obviousness-type double patenting rejections are over the subject matter claimed in US Patent 7,192,677 B2 (Suzuki'677), which was filed as US application 11/077,356 (Application'356).

The obviousness-type double patenting rejections over the subject matter claimed in Application'356, set forth in the office action mailed on Oct. 13, 2006, paragraphs 19-24, were

withdrawn in response to the amendment filed on Jan. 29, 2007, introducing claims 54-83. The then-newly added independent claims excluded the bisazo compound claimed in the US application. See the office action mailed on Apr. 17, 2007, paragraph 2. The amendments to the independent claims filed on Nov. 5, 2007, removed that exclusion. Accordingly, the obviousness-type double patenting rejections over the subject matter claimed in Application'356, which issued as US Patent No. 7,192,577 B2, have been reinstated and are set forth infra.

18. Claims 54, 55, 79, and 80 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 7,192,677 B2 (Suzuki"677) in view of US 5,965,311 (Suzuki'311), JP'250, Schaffert, and Tanigawa. See the DERWENT machine-assisted translation of JP'250 for cites.

Reference claim 4, which depends on reference claim 1, recites an electrophotographic photoreceptor comprising an electroconductive substrate and a photoconductive layer comprising a phthalocyanine pigment and the asymmetric disazo pigment of the formula recited in reference claim 1. The phthalocyanine pigment is a metal free-τ-type phthalocyanine

pigment or a metal free X-type phthalocyanine pigment. The phthalocyanine pigment and the asymmetric disazo pigment are present in an amount ratio by weight of 2.5:3.5 to 1:1, which is within the weight ratio range of 1:5 to 5:1 recited in instant claim 54. The phthalocyanine pigment meets the phthalocyanine pigment limitations recited in instant claim 55. The asymmetric disazo pigment meets the compositional limitations of formula (II) recited in instant claim 54, when Cp1 is C2-2, i.e., 2-chlorophenyl, and Cp2 is C2-13, i.e., 4-methylphenyl. Reference claim 2, which depends on reference claim 1, requires that the photoconductive layer comprise a charge transport layer and a charge generation layer comprising the phthalocyanine pigment and the asymmetric disazo pigment. The layer structure meets the layer structure recited in instant claim 54.

The subject matter recited in the claims of Suzuki'677 does not recite the presence of an intermediate layer as recited in the instant claims. Nor does it require that the conductive substrate be an aluminum drum.

The use of an aluminum drum as the electroconductive substrate of a photoreceptor is well known in the art. See Suzuki'311, col. 4, lines 56-60, col. 4, line 63, to col. 5, line 8, and col. 5, lines 62-64. Suzuki'311 teaches an

intermediate layer that is located between the electroconductive support and the charge generation layer. The intermediate layer comprises a binder resin, first titanium oxide A particles having a primary particle diameter of 0.01 to 0.1 μm, and second titanium oxide B particles having a primary particle diameter of 0.1 to 1 μm. The intermediate layer has a thickness of 10 μm that meets the layer thickness range of "up to 10 μm, excluding 0" recited in instant claim 80. See col. 5, lines 45-48, and embodiment 1 (E1) at col. 5, lines 54-64. Suzuki'311 also teaches that the intermediate layer preferably has a thickness of 0.3 to 30 μm, which encompasses the layer thickness of 3 μm recited in instant claim 79. Col. 4, lines 40-43.

According to Suzuki'311, when a photoreceptor comprises its intermediate layer, the layer prevents the occurrence of interference fringes and image defects. The photoreceptor provides excellent images. Col. 3, lines 13-15, and Table 1 at col. 7, example E1 and the accompanying text.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Suzuki'311, to use the aluminum drum and the intermediate layer taught by Suzuki having a thickness as recited in instant claims 79 and 80 in the photoreceptor recited in the claims of Suzuki'677. That person

would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that prevents the occurrence of interference fringes and image defects and that provides excellent images.

The subject matter recited in the claims of Suzuki'677 does not require the presence of an organic sulfur-containing compound in the charge transport layer as recited in instant claim 54.

JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. The discussion of JP'250 in paragraph 5, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material, as an antioxidant in the charge transport layer in the photoreceptor rendered obvious over the

subject matter recited in the claims of Suzuki'677 combined with the teachings of Suzuki'311. That person would have had a reasonable expectation of successfully obtaining a photoreceptor that has improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image forming apparatus which comprises a contact charger," in claim 54 is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the subject matter recited in the claims of Suzuki'677 combined with Suzuki'311 and JP'250. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is well known in the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." The discussions of Schaffert and Tanigawa in paragraph 5 above are incorporated herein by

reference. As discussed above, the photoreceptor rendered obvious over subject matter recited in the claims of Suzuki'677 combined with the teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 54 does not appear to result in a compositional or structural difference between the photoreceptor recited in the instant claims and the photoreceptor rendered obvious over the subject matter recited in the claims of Suzuki'677 combined with the cited prior art.

19. Claims 58-60, 63, 64, 67, 68, and 81-83 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, and Tanigawa, further in view of Kanoto. See the DERWENT machine-assisted translation of JP'250 for cites.

The subject matter recited in the claims of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 18 above, which is incorporated herein by reference.

The claims in Suzuki'677 do not recite an apparatus or a process cartridge as recited in instant claims 58 and 63, respectively. Nor do the claims recite an image forming method comprising a reversal developing step as recited in instant claim 67.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art. Kanoto discloses an imaging apparatus comprising a readily detachable process cartridge, which both meet the structural limitations recited in instant claims 58, 59, 67, 81, and 82, but for the particular photoreceptor. Kanoto further discloses that its imaging apparatus performs an imaging forming process that meets the process steps recited in instant claims 67 and 83, but for the step of the providing the particular photoreceptor. The discussion of Kanoto in paragraph 7 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to incorporate the electrophotographic photoreceptor rendered obvious over the subject matter recited in the claims of Suzuki'677 combined with the teachings of Suzuki'311, JP'250, Schaffert, and Tanigawa in Kanoto's detachable process cartridge

in its image forming apparatus. That person would have had reasonable expectation of successfully practicing a reversal development imaging method and obtaining an image forming apparatus comprising an easily detachable process cartridge having the benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

20. Claim 56 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, and Tanigawa, further in view of Kakuta and DERWENT abstract Acc. No. 1983-816039. See the DERWENT machine-assisted translation of JP'250 for cites.

The subject matter recited in the claims of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 18 above, which is incorporated herein by reference.

The claims in Suzuki'677 do not recite that the metal-free τ-type phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in instant claim 56. However, Kakuta discloses a τ-form metal-free phthalocyanine that appears

to have an X-ray diffraction pattern as recited in the instant claims. The discussion of Kakuta in paragraph 8, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Kakuta's τ-form metal-free phthalocyanine pigment as the metal-free phthalocyanine in the photoreceptor rendered obvious over the subject matter recited in the claims of Suzuki'677 combined with the teachings of Suzuki'311, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, and having the benefits disclosed by JP'250.

21. Claims 61, 65, and 69 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, Tanigawa, and Kanoto, further in view of Kakuta and DERWENT abstract Acc. No. 1983-816039. See the DERWENT machine-assisted translation of JP'250 for cites.

The subject matter recited in the claims of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, Tanigawa, and Kanoto renders obvious a process cartridge, an apparatus, and a method

of forming an image as described in paragraph 19 above, which is incorporated herein by reference.

The claims in Suzuki'677 do not recite that the τ-form metal-free phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in the instant claims. However, Kakuta discloses a τ-form metal-free phthalocyanine that appears to have an X-ray diffraction pattern as recited in the instant claims. The discussion of Kakuta in paragraph 8, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Kakuta's τ-form metal-free phthalocyanine pigment as the metal-free phthalocyanine in the photoreceptor rendered obvious over the subject matter recited in the claims of Suzki'677 combined with the teachings of Suzuki'311, JP'250, Schaffert, and Tanigawa, and to use the resulting photoreceptor in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, thereby providing an electrophotographic imaging apparatus comprising an easily detachable process cartridge and a reversal development imaging method, each of which has improved

sensitivity to the longer wavelength region, and provides good toner images as taught by JP'250.

22. Claim 57 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, and Tanigawa, further in view of Byrne.

The subject matter recited in the claims of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 18 above, which is incorporated herein by reference.

The claims in Suzuki do not recite that the metal-free X-type phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in instant claim 57. However, an X-form metal-free phthalocyanine pigment having an X-ray diffraction pattern recited in the instant claims is well known in the art, as shown by Byrne. The discussion of Byrne in paragraph 13, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use the Byrne X-form metal-free phthalocyanine pigment having a X-ray diffraction pattern that meets the limitation of the instant claim as the metal-free

X-type phthalocyanine pigment in the photoreceptor rendered obvious over the subject matter recited in the claims of Suzuki'677 combined with the teachings of Suzuki'311, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, and having the benefits disclosed by JP'250.

23. Claims 62, 66, and 70 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, Tanigawa, and Kanoto, further in view of Byrne.

The subject matter recited in the claims of Suzuki'677 in view of Suzuki'311, JP'250, Schaffert, Tanigawa, and Kanoto renders obvious a process cartridge, an apparatus, and a method of forming an image as described in paragraph 19 above, which is incorporated herein by reference.

The claims in Suzuki'677 do not recite that the metal-free X-type phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in the instant claims. However, an X-form metal-free phthalocyanine pigment having an

X-ray diffraction pattern recited in the instant claims is well known in the art, as shown by Byrne. The discussion of Byrne in paragraph 13, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Byrne's X-form metal-free phthalocyanine pigment as the metal-free phthalocyanine in the photoreceptor rendered obvious over the subject matter recited in Suzuki'677 combined with the teachings of Suzuki'311, JP'250, Schaffert, and Tanigawa, and to use the resulting photoreceptor in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, thereby providing an electrophotographic imaging apparatus comprising an easily detachable process cartridge and a reversal development imaging method, each of which has improved sensitivity to the longer wavelength region and provides good toner images as taught by JP'250.

24. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicants are

reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1600~~ 1700

JLD
Jan. 9, 2008